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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,703	12/21/2001	William E. Baker	3-8-8-1	3884

7590 07/13/2005

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EXAMINER	
AST, FATIMA M	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/029,703	BAKER ET AL.	
	Examiner	Art Unit	
	Fatima Ast	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-18 are pending.

Specification

1. The disclosure is objected to because of the following informalities: There is a typographical error on page 7 line 8. The disclosure references "header portions 310H, **310P**". Examiner will assume the intended reference is "header portions 310H, **312H**".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 8 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narad (US 6,157,955).

3. Regarding claims 1 and 14, Narad discloses a processor comprising:

4. classification circuitry (column 36 lines 37-67 and forward); and

5. memory circuitry coupled to the classification circuitry and being configurable to store at least a portion of at least a given one of a plurality of packets to be processed by the classification circuitry (column 37 lines 21-44).

6. Narad does not specifically enumerate that the classification circuitry is configurable to implement a non-sequential packet classification process for at least a subset of the plurality of packets including the given packet where classification checks

can occur beginning at different designated addresses. However, Narad does teach processing of arbitrary protocol headers within a packet, and further teaches index pointers to each layer of a protocol header (column 39 line 57 – column 40 line 19). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention that the index pointers of Narad would be used to implement non-sequential packet classification, where classification checks can begin at the different addresses of the pointers. The presence of pointers into the packet, and the teaching of Narad of extracting arbitrary fields from packet headers (column 36 lines 46-58) obviously provide for the ability to begin processing at any of the pointers, as such direct addressability is the function of pointers.

7. Regarding claims 2 and 15, Narad discloses the given packet is generated in accordance with multiple embedded protocols (column 4 lines 46-47, column 36 lines 39-58) and the non-sequential packet classification process allows the processor to return from a given point within the packet at which a final one of the protocols is identified to a beginning of the packet (column 37 line 14-20).

8. Regarding claim 3, Narad discloses the given point within the packet comprises a point at which a Transmission Control Protocol (TCP) destination is identified (column 104 line 64 – column 105 line 2).

9. Regarding claims 4 and 16, Narad does not specifically enumerate the non-sequential packet classification process is implementable without loss of any portion of the packet, however, Narad teaches pointers to protocols within the packet and the

loading of the packet in a packet buffer and maintaining addressability to all portions of the packet (column 37 lines 7-44).

10. Regarding claim 8, Narad discloses the memory circuitry comprises an internal memory of the processor configurable to store a designated portion of the given packet and an external memory coupled to the processor and configurable to store substantially the entire given packet (Fig. 3 elements 238, 240, 260 and Fig.13 element 1204).

11. Claims 5-7, 9-13 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narad as applied to claims 1 and 14 above, and further in view of Maher (US 6,381,242).

12. Regarding claims 5 and 17, Narad does not specifically enumerate multiple passes of the classification process.

13. Maher discloses the non-sequential packet classification process comprises execution of at least one skip to beginning instruction that allows the processor to skip back to a particular bit of the given packet at a time during the classification process after which the particular bit has been processed, such that multiple passes of the classification process can be performed on the given packet (column 5 line 58 – column 6 line 19, where the packet classification includes multiple passes through the header preprocessor and the content processor, and such processing occurs after the processor returns to the beginning of the packet). It would have been obvious to combine the classification process of Maher with the classification process of Narad in order to gain the advantage of a "content-aware" network, as taught by Maher, where

such "content-aware" functionality provides the advantages of added security and quality of service.

14. Regarding claim 6, Maher discloses the skip to beginning instruction is executable in the processor under the control of an external host device operatively coupled to the processor (Fig. 2 illustrates devices coupled to the processor elements 102 and 122).

15. Regarding claim 7, Maher discloses the processor is configurable to provide an interface between a network from which the packets are received and a switch fabric (Fig. 4 elements 402 and 404).

16. Regarding claims 9 and 18, Maher discloses the classification circuitry comprises at least a first pass classifier and a second pass classifier (column 5 line 57 – column 6 line 19), the non-sequential packet classification process being implementable in at least the second pass classifier.

17. Regarding claim 10, Maher discloses the first pass classification comprises at least one of a reassembly operation (column 6 lines 1-7), a parity check and a priority determination.

18. Regarding claim 11, Maher discloses the first pass classification generates information which is passed in a specified data structure to the second pass classifier for use in the non-sequential packet classification process (column 6 lines 8-19).

19. Regarding claim 12, Maher discloses the process comprises a network processor (column 2 lines 13-39).

20. Regarding claim 13, Maher discloses the processor is configured as an integrated circuit (column 2 lines 13-39).

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Hebb (US 6,587,463)

Calvignac (US 6,775,284)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fatima Ast whose telephone number is (571) 272-7217. The examiner can normally be reached on M-F, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fatima Ast
Examiner
Art Unit 2143

WILLIAM C. VAUGHN, JR.
PRIMARY EXAMINER